

## STORAGE BATTERIES IN COLD WEATHER

Require Reasonable Attention  
if Good Service Is  
Expected.

When a heart in caring for your storage battery. The constant spinning of a stiff motor on a cold morning is not the healthiest kind of exercise for any battery. Yet many motorists thoughtlessly allow their batteries to spin down in this manner, with the result that no sufficient use of the hand crank becomes necessary.

The experience of the following simple instructions, provided by Manager "B" of the New York branch of the Federal-Lite Company, Inc., will prevent cold weather starting and lighting troubles and enable the motorist to get the most out of his battery and prolong its life.

One of the surest methods of preventing storage battery abuse in cold weather is to see that the storage battery is always charged. There is no danger of a fully charged battery freezing. The specific gravity at least once every two weeks by means of a hydrometer. The reading should be between 1.250 and 1.300 all the time. When the specific gravity is low run the motor at a moderate speed for two or three hours or have a battery charged at a competent battery service station.

When the storage battery is not in actual use it requires just as thoughtful care as when it is performing its functions on the car, as a battery standing idle is constantly discharging itself.

Therefore when laying the car up for the winter arrange to give the storage

not store the battery where there is any likelihood of tools or anything else being laid across the top.

"Battery service stations will store your battery through the winter months, give it a freshening charge every thirty days, take hydrometer readings, etc., for a nominal monthly fee.

"The observance of the above suggestions will prevent any loss of efficiency and enable you to get the most out of your starting and lighting system every month of the year."

### LECTURES ON HIGHWAYS.

A Series of Talks on Maintenance and Construction at A. C. A.

The first of a series of illustrated lectures on highway construction and maintenance, with the problems incident thereto, will be given under the joint auspices of the department of highway engineering of Columbia University and the Automobile Club of America. The lectures are to be held in the assembly room of the Automobile Club, 241 West Fifty-fourth street, and all interested persons may obtain, without charge, tickets of admission by applying to the secretary of the club.

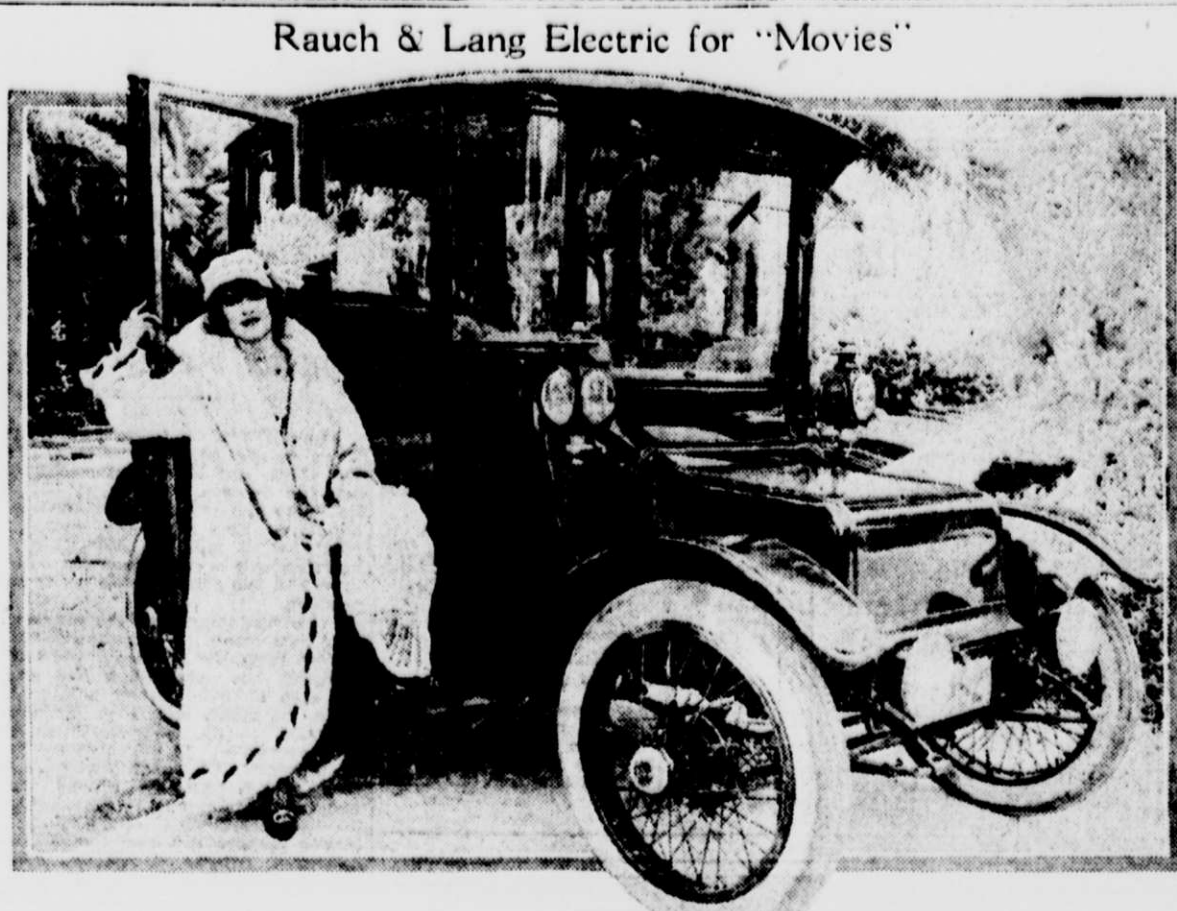
The first of these lectures will be given by Arthur H. Blanchard, professor in charge of the graduate course in highway engineering at Columbia University and consulting highway engineer of New York city, on Monday, December 6, at 8:30 P. M. Professor Blanchard's subject will be "State and Municipal Highway Problems."

The second lecture will be delivered on Monday, December 20, at 8:30 P. M. Morris L. Cooke, Director of the Department of Public Works of the city of Philadelphia, speaking on "Contract Procedure for Public Works."

### Hupmobile Service Plan.

Five months of practical demonstration of the Hupmobile maintenance service plan for automobile owners has convinced J. Walter Drake, president of the Hupmobile Car Corporation, that it is a most valuable innovation for the automobile owner.

We have had our nationwide service plan, which we inaugurated at the start of our recent season, in practical operation for five months," said Mr. Drake, "and we find that it has met with the most hearty approval of all owners. We now have over 2,100 service stations throughout the United States and Canada and are increasing this number at the rate of about 125 a week. We have service stations all the way from Juneau, Alaska, to Miami, Fla.



A number of moving picture stars operate electrically in "movies," chiefly because the electric is easy to drive. Miss Fannie Ward, now an actress in silent drama, is shown here with her car which has figured in several films.

Rauch & Lang Electric for "Movies"

## FORESIGHT A FACTOR IN CAR BUILDING

Poertner Says National and  
Jeffery Plants Ordered  
Far Ahead.

According to William C. Poertner of the Poertner Motor Car Company, who has just been on a trip to the National factory at Indianapolis and the Jeffery plant at Kenosha, Wis., news in the history of the industry has the material market been so unpropitious at present. In fact the raw material market is making many manufacturers and parts makers lie awake nights, and it means that there will be a shortage of cars in the spring. Makers are finding it difficult to increase the production in the ratio that sales are increasing, and while it was thought the day of "premium" deliveries had passed it is practically certain that cars will sell at a premium when the rush of the spring selling season begins.

"However," says Mr. Poertner, "the National factory has been quite fortunate in getting a goodly proportion of raw material needed in the production of its cars, and although prices on commodities which have always been considered staple have jumped from 2 to 20 per cent within a week the National company will not be held back in production, having placed orders so far ahead and secured deliveries of a large proportion. It has been the policy of the National factory to place contracts for raw material far in advance of production, and the wisdom of this policy is now paying big dividends. Another thing that is a big help is the fact that the National factory owns and operates its machine shop and can turn out many of the desired parts, which would hold up the entire proceedings of the factory if these parts had to be bought in the open market."

"At Kenosha, the Thomas D. Jeffery Company read the handwriting on the wall some months ago, and right at the time when many manufacturers were worrying and thinking of retrenching

Hugh Chalmers



Recently celebrated the eighth anniversary of his entry into the automobile industry.

the Jeffery company was preparing for the same emergency which has arisen. Indeed the Jeffery company has looked still further in realising that practically no automobile bodies are coming from Europe at present, owing to the fact that the factories there are tied up making war munitions. The Jeffery designers have evolved some body types which will be truly striking and distinctive and comparable in beautiful lines and workmanship with anything that Europe has sent us in the past."

## RUBBER CULTIVATED IN EAST INDIA NOW

Has Been Domesticated Much  
Like an Ordinary  
Plant.

"Some youngsters still believe that rubber is somehow made from the thick, waxy leaves of the rubber plant growing in the home window garden," said F. Haskell Smith, factory superintendent of the Federal Rubber Manufacturing Company, Milwaukee. "This isn't remarkable, considering the general misconception regarding rubber of those who are familiar with it only as finally manufactured into tires or other things."

"Wild rubber still furnishes much of the raw material. The forests in Para and other Brazilian districts supply this native rubber. But rubber has now been successfully domesticated, and is grown on East India plantations just as any other cultivated crop or plant is grown."

"In both cases, 'wild' or 'plantation' rubber comes from the tree is a creamy, viscous, syrupy form, nearly pure white in color. The natives who gather and produce the same protection as that given to farm grown rubber, so it comes to the market smoky, dirty, sometimes almost black."

"The 'plantation' rubber comes to the market in yellowish white sheets of nearly the same color as the map from which they are made."

"We get both kinds of rubber in our big Federal factory and do nothing to either excepting to cleanse both of all impurities, to make and keep the natural color and strength—especially in the rubber we use to combine with other material in making automobile tires. For this purpose we need all the resilience, toughness and wear with which nature has endowed rubber."

"This is why the Federal is 'the whitest tire you know,' and why it is our desire to use and keep our rubber pure and strong, making the Federal factory 'the rubber plant' in the minds of tire users who want to get all the mileage out of rubber which nature put there."

### Pathfinder "Twin Six" Roadster



This Pathfinder, which make is represented by Senior Bros. in the East, underwent some strenuous tests recently which were witnessed by the officers of the company shown above. In the car are W. C. Tinsdale, Jr., W. E. Stalnsker, W. K. Bromley and F. G. Buskirk.

battery at least once a month attention yourself or leave it in the hands of a competent battery service station.

"In order to prevent freezing the storage battery should be kept in a fully charged condition. When removed from the car it should be given a freshening charge at once and every month thereafter, also a thorough charge after an idle period before it is returned to service."

"To determine the condition of the storage battery it is necessary to take a hydrometer reading at least once a month. If the specific gravity reading is 1.200 to 1.300 the battery is fully charged and will not freeze. If the reading is 1.120 the battery is completely discharged and will freeze at 20 degrees below zero. If the reading is 1.100 it is more than half discharged and will freeze at zero. If the reading is .200 it is half charged and will freeze at 20 degrees below zero. If the reading is 1.250 it is one-quarter discharged and will freeze at 60 degrees below zero."

When taking hydrometer readings make sure that the solution (electrolyte) is up to the proper level, that is, covering the plates. If not add distilled water and run the motor for at least two hours, then take another hydrometer reading.

"The battery must be kept in a dry place, where the temperature is known not to go below 20 degrees above zero, far away from any excessive heat. Do

### HEAVY MAXWELL SHIPMENTS.

Record Breaking Cargoes Precede Close of Lake Navigation.

Unusual efforts have been made by inland mariners to keep ships in commission long enough to carry from Detroit the heavy water shipments of automobiles ordered by other lake cities. To a great extent the labor has been finished. While there remain many orders for early December delivery, as yet unfilled, these can undoubtedly be carried by rail, with the regular winter cars.

The lake fall shipments by water have set several new records, prominent among which is a cargo of seventy Maxwells, shipped from Detroit to the Leland-Griffin Company of Toledo. This was the largest cargo of cars, both in number and value, which had ever been received at an Ohio port. While it included the regular November shipments of the Maxwell Toledo distributors, it also gave them a generous reserve for December, enabling them for the first time since June to guarantee immediate delivery to buyers.

This record was equaled a few days later by the shipment of ninety Maxwells to the company's representative in Cleveland. This shipment, valued at nearly \$60,000, is the largest and most valuable in lake traffic annals. To make it required the careful economy of

### Harrington Made Sales Manager.

Announcement has been made by the Packard Motor Car Company of New York of the appointment of A. C. Harrington, for thirteen years a member of the Packard and Packard Motor Car Company, to the position of sales manager of the territory.

Mr. Harrington's first service for his company was as a sales clerk in Warren, Ohio. After a year he entered the advertising department of the company, and a short time later was transferred to the factory at Detroit, where he was placed in charge of the parts order and repair department.

He came to New York nine years ago as head of the specifications department of the metropolitan organization, and the following year branched out into the sales field. His real capacity was most clearly revealed in the sale of a single number of high priced cars to that of a number of medium priced cars. President of the Oldsmobile Company of New York. This year's new model of the Packard is being sold over twice as fast as the original medium priced model put out last year. During the months of August, September and October the sales of this car showed a gain of 133 per cent over the same months of last year.

This great gain might have been larger if more cars had been available for shipment, and despite the approach of winter the business is holding up, especially in the metropolitan districts. Where the sales of both touring cars and roadsters continue at an unabated pace owing chiefly to our ability to make immediate deliveries. On top of this the good body business has been wonderful.

### STRENUOUS CADILLAC TRIP.

"Eight" Completes 6,000 Mile Tour and Climbs Mount Rainier.

After having covered six of the Western and coast States, reaching 10,000 foot elevations, J. H. Newbauer of San Francisco has completed a 6,000 mile tour in his Cadillac "eight."

The main trails were traversed in Colorado, Wyoming, Montana, Idaho, Washington and Oregon. The Lincoln Highway was followed from San Francisco to Salt Lake City, whence Mr. Newbauer took the Midland trail through the Price Ridge canyon to Price, Utah, and then on to Grand Junction, Col. In going on to Colorado Springs it was necessary to cross Battle Mountain at an elevation of 10,384 feet—almost two miles—and the Continental Divide was next crossed at a height of 10,400 feet. On reaching Seattle a visit was made to Rainier National Park and the car was driven up Mount Rainier, which towers 14,225 feet above sea level.

### STARTER FOR REO TRUCKS.

Electric Device for Motor Trucks Adds to Efficiency.

When the electric starter had been developed and perfected it became recognized as a necessary adjunct to a pleasure car, but few were employed on motor trucks. When the Reo Motor Truck Company brought out its new 1,600 pound wagon they applied an electric starter. Reo engineers made a series of exhaustive tests, in which it was thoroughly demonstrated that the starter on a vehicle of this kind will more than pay for itself in the first year in the saving of gasoline alone, not to mention the great saving on the motor labor, etc.

When the truck owner's interests had been considered it was found that the driver's good will was also enlisted, and as a result it is found that he invariably shows his appreciation of the self-starting device, which saves him much physical exertion, not to mention the constant menace of broken arms, by returning a better day's work and a more careful handling of the vehicle.

### Olds Sales Swiftly.

The Olds Motor Works of Lansing, Mich., has become one of the largest producers in the country since the company shifted its policy from the production of a small number of high priced cars to that of a number of medium priced cars. President of the Oldsmobile Company of New York. This year's new model of the Packard is being sold over twice as fast as the original medium priced model put out last year. During the months of August, September and October the sales of this car showed a gain of 133 per cent over the same months of last year.

## The Path of Safety

the WHITEST  
tire you know

Tire-trouble is "laying down the road, now-a-days. When it's frozen the road is full of hard, fabric-punching points. When it thaws the 'going' is slippery and the poorly-shod car begins to skid.

"The Path of Safety" through these wintry road-worries is blazed by

## FEDERAL

Double-Cable-Base  
"Rugged" Tread Tires

They stay on the rim and stay on the road—when everything slips, FEDERALS stick!

Ask us to show you the Federal Double-Cable-Base; the sidewall-tapered Rugged tread and other exclusive FEDERAL features. Investigation today may save trouble tomorrow.

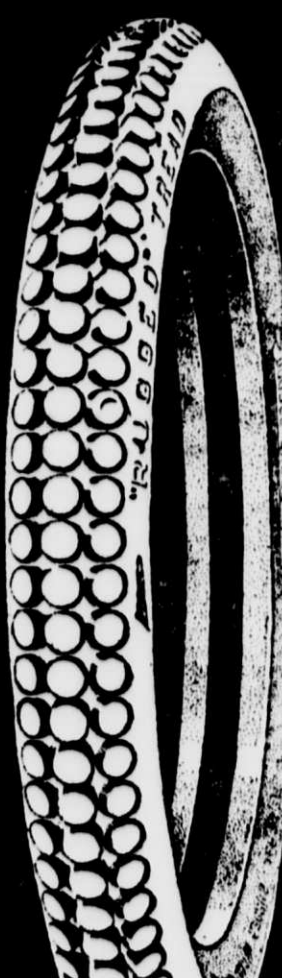
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Manufacturers of Federal Automobile Tires, Tubes and Auto Tire Builders, Motorcycle, Bicycle and Carriage Tires, Rubber Heels, Horse Shoe Pads, Rubber Matting and general mechanical rubber goods.

FEDERAL "The Sterling Mark on Rubber."



## FRANKLIN

Berlin  
7 Passenger  
\$3100.



It is generally supposed that enclosed cars are heavy, difficult to handle and expensive to run, yet Franklin cars of this type weigh little more than the open models.

With the freezing and leaking of water-cooling systems eliminated through Franklin direct air cooling, there is no annoying interruption of service, even in the severest weather.

Large mileage from tires, low consumption of gasoline and the great comfort of the cars, all unite to extend their use beyond the limits ordinarily set.

The 4-passenger coupe and 5-passenger sedan match in utility the Franklin roadster and touring car—applicable to all purposes.

Sedan, \$2850. Coupe, \$2800.

## FRANKLIN MOTOR CAR CO.

GLENN A. TISDALE, President.

1848 Broadway at 61st, N. Y.

Telephone,  
7809 Columbia

\$750

Tell father an Overland will give him some of the Twentieth Century pleasures of life.

Tell him not to put off until tomorrow the sport he (and incidentally you) can be enjoying today.

This Overland is big, powerful, beautiful and comfortable.

It has all the advantages of the highest priced cars.

The convenient electric switches on the steering column are one example.

The side curtains, which can be set quickly, easily and tightly, make the car snug and cozy for disagreeable weather.

Over 200,000 people have found an Overland a very economical and sound investment.

As it has paid others so will it pay you.

Order yours today. Tomorrow morning you can be driving.

It's time you had one. Don't delay. Place your order now.

C. T. SILVER MOTOR CO., Distributors

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Toledo, Ohio

"Made in U. S. A."